Patent claims

1. A converter circuit having
a switching transistor (MOS1) and
a drive circuit for driving the switching transistor (MOS1) which is designed to switch the switching transistor (MOS1) in response to a voltage or current value,

characterized

in that the drive circuit has two series-connected threshold value components (K1, K2, K1', K2') which respond to a respective input signal as a function of the threshold value with an output signal transition,
in that an input of a first one of the threshold value components (K1, K1') is connected up such that it can detect the voltage or current value, and
the output of the first threshold value component (K1, K1') drives an input of the second threshold value component (K2, K2'), and
the output of the second threshold value component (K2, K2') drives the control electrode of the switching transistor (MOS1).

2. The converter circuit as claimed in claim 1, in which the drive circuit is designed to respond to a voltage or current value in the converter circuit.

3. The converter circuit as claimed in claim 2, in which the drive circuit is designed to respond to a voltage or current value of the switching transistor (MOS1).

4. The converter circuit as claimed in claim 3, which contains a class E converter.

5. The converter circuit as claimed in claim 3, also in conjunction with claim 4, which is designed as a single-feedback system via the threshold value components (K1, K1').

6. The converter circuit as claimed in one of the preceding claims, in which at least one of the threshold value components (K1, K2, K1', K2') is a differential amplifier, preferably both of the threshold value components (K1, K2, K1', K2') are differential amplifiers.

7. The converter circuit as claimed in claim 6, in which the differential amplifier(s) (K1, K2, K1', K2') is/are (a) comparator(s).

8. The converter circuit as claimed in one of the preceding claims having a delay circuit (R2, C2, D2) between the output of the first (K1, K1') and the input of the second (K2, K2') threshold value component, which delay circuit (R2, C2, D2) passes on output signals, representing a first switching state of the switching transistor (MOS1), from the first threshold value component (K1, K1') to the input of the second threshold value component (K2, K2') only once a fixed time has elapsed, but allows output signals representing the other, second switching state to pass with less of a time delay.

9. The converter circuit as claimed in claim 8, in which the delay circuit (R2, C2, D2) has a capacitor (C2), and the output of the first threshold value component (K1, K1') is connected to the capacitor at a high impedance (D2, K1') when there is a transition from an output signal representing the second switching state to an output signal representing the first switching

state and is connected to the capacitor at a lower impedance (D2, K1') when there is a transition from an output signal representing the first switching state to an output signal representing the second switching state.

10. The converter circuit as claimed in claim 9, in which the first threshold value component (K1) has a push-pull output, and the high impedance is generated by a rectifier diode (D2) which is off between the output of the first threshold value component (K1) and the capacitor (C2).

11. The converter circuit as claimed in claim 9, in which the first threshold value component (K1') has an open-collector or open-drain output.

12. The converter circuit as claimed in claim 7 and 8, also in conjunction with one of claims 9 - 11, in which the second threshold value component (K2, K2') is a comparator, and a reference value of the comparator (K2, K2') can be adjusted in order to be able to adjust the fixed time for passing on the output signal representing the first switching state of the switching transistor (MOS1).

13. The converter circuit as claimed in one of the preceding claims, in which a driver circuit (TR) is provided between the output of the second threshold value component (K2, K2') and the control electrode of the switching transistor (MOS1).

14. An electronic ballast for a light-emitting device (R_Load), in particular a lamp, having the converter circuit as claimed in one of the preceding claims.

15. The electronic ballast as claimed in claim 14, which is designed to supply power to a dielectric barrier discharge lamp (R_Load).

16. An illumination system comprising a lamp (R_Load) and the electronic ballast as claimed in claim 14 or 15.

17. A method for operating the converter circuit as claimed in one of claims 1 - 13, in which the current or voltage value is supplied to the drive circuit and is applied there to the input of the first threshold value component (K1, K1'), an output signal, which responds to said current or voltage value as a function of the threshold value, from the first threshold value component (K1, K1') is applied to the input of the second threshold value component (K2, K2'), and an output signal, which responds to said output signal from the first threshold value component (K1, K1') as a function of the threshold value, from the second threshold value component (K2, K2') leads to the control electrode driving the switching transistor (MOS1).

18. A method for operating a light-emitting device (R_Load) using the electronic ballast as claimed in claim 14, including the method for operating the converter circuit as claimed in claim 17.